

Light is OSRAM



02.08.2021

Dear Customer,

please find attached our OSRAM OS PCN:

OS-PCN-2021-021-A Introduction of Second Source for Green Laser PLT5 520B

Important information for your attention:

Please review the **Customer approval form** at the end of the document and provide your feedback to your OSRAM OS sales partner before **07.09.2021**. *)

Your prompt reply will help OSRAM OS to assure a smooth and well executed transition. If OSRAM OS does not hear from your side by the due date, we will assume your (if you are a Distributor: and your customer's) full acceptance to this proposed change and its implementation.

OSRAM OS understands the time requirements your organization needs to approve this PCN. However, if you can provide OSRAM OS an estimated date your organization will approve this PCN, OSRAM OS can use this date to plan continued production to secure your order needs during the transition time you require to review and approve this PCN.

Your attention and response to this matter is highly appreciated.

Please direct your inquiries to your local Sales office.

*) OSRAM OS aligns with the widely-recognized JEDEC STANDARD "JESD46-C", which stipulates:

- "Customers should acknowledge receipt of the PCN within 30 days of delivery of the PCN."
- "Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change."
- "After acknowledgement, lack of additional response within the 90 day period constitutes acceptance of the change. An acceptance or concern response should be submitted to the supplier in a timely fashion, (i.e., customer should not wait to the end of the 90 day review period before responding, if the response is known before that time.)"

OS-PCN-2021-021-A

Introduction of Second Source for Green Laser PLT5 520B

Subject of change:	Introduction of Second Source for Green Laser PLT5 520B	
Affected products	PLT5 520B	
Reason for change:	Expand production capacities and secure continuous supply for green laser PLT5 520B in TO56 package	
Description of change	Please refer to 2_cip_OS-PCN-2021-021-A	
Product identification:	Date code, lot number	
Time schedule for PCN material (after implementation of change):	Final data sheet	Available
	Final qualification reports	Available
	Samples available	16.08.2021
	Intended Start of delivery	04.10.2021 ^{*)} , ^{**)} ^{*)} or earlier if released by customer and upon mutual agreement ^{**)} mixable technologies

Assessment:

- No changes in design or physical data
 - No changes in chip performance
 - No changes in reliability
-

Documentation:

2_cip_OS-PCN-2021-021-A
3_cip_OS-PCN-2021-021-A_PLT5 520B

Note:

Pre-PCN material: Products of current status, means before implementation of the changes as described in the PCN.

PCN material: Products with implementation of the changes as described in the PCN.

Customer approval form

OS-PCN-2021-021-A

Introduction of Second Source for Green Laser PLT5 520B

Please list product(s) affected in your application(s):

Please check the appropriate box below:

- | | |
|---|---|
| ☐ Approval:
We agree with the proposed change and accept start of the shipment upon availability of PCN material. | ☐ Not relevant:
Change is not relevant for products in use. |
|---|---|
-
- ☐ **Change cannot be accepted:**
- ☐ **We have objections:**
 - ☐ **We request following Information:**
 - ☐ **We request following Samples:**
 - ☐ **Expected approval date:** dd.mm.yyyy
 - ☐ **Volume requirements for Pre-PCN material:**

Sender:

Company:

Address / Location:

Signature:

Date:

Please return this approval form to your Sales partner.

OSRAM Opto Semiconductors
GmbH

Head Office:

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93055 Regensburg, Germany
Phone +49 941 850-5
Fax +49 941 850-1002
www.osram-os.com

OSRAM
Opto Semiconductors



OS-PCN-2021-021-A

Introduction of Second Source for Green Laser PLT5 520B

Customer information package

OS QM CQM | 02.08.2021

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Overview



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1. Reason for Change

Expand production capacities and secure continuous supply for green laser PLT5 520B in TO56 package

Assessment

- No changes in design or physical data
- No changes in chip performance
- No changes in reliability

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Introduction of Second Source for Green Laser PLT5 520B



2. Affected Products

Devices
PLT5 520B

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Introduction of Second Source for Green Laser PLT5 520B



3. Description of Change A – Introduction of Second Source

Current status	New status
Subcontractor A	Subcontractor A and Subcontractor B

Current status	New status
Before change: only one type tray (200 pcs per tray) 200 pcs per tray	After change : Two type trays (100 pcs and 200 pcs per tray) 100 pcs and 200 pcs tray exist in parallel

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Introduction of Second Source for Green Laser PLT5 520B

QUALITY
FIRST

3. Description of Change A – Introduction of Second Source

Current status	New status
Before change : only one box size (box size : 270 * 170 * 45mm)	After change : Two box size (270 * 170 * 45mm and 128mm x 103mm x 25mm)
 box size : 270 * 170 * 45mm	 270 * 170 * 45mm and 128mm x 103mm x 25mm exist in parallel

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Introduction of Second Source for Green Laser PLT5 520B

QUALITY
FIRST

3. Description of Change B – Data Sheet Modifications

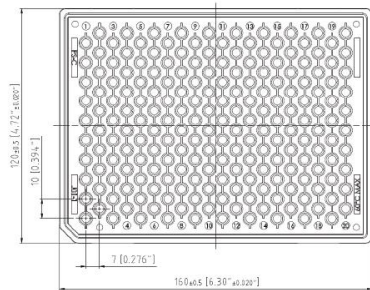
Current status

New status

Add additional tray and Inner box in the data sheet

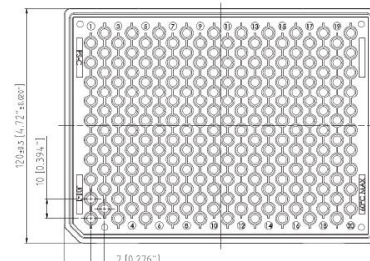
Tray 10)

200 pieces per Tray



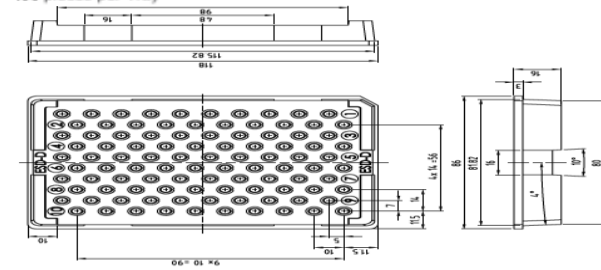
Tray 10)

200 pieces per Tray



Tray 10)

100 pieces per Tray



OS-PCN-2021-021-A

QUALITY
FIRST

Introduction of Second Source for Green Laser in TO56 Packages

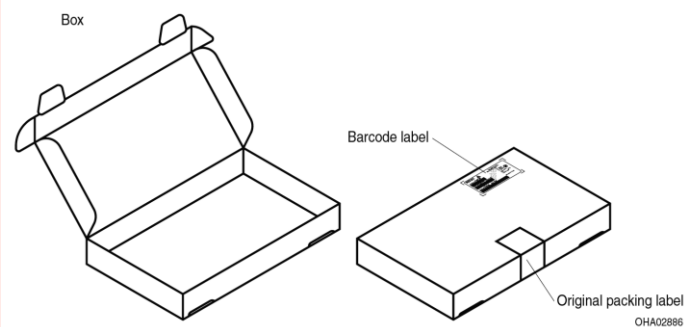
3. Description of Change B – Data Sheet Modifications

Current status

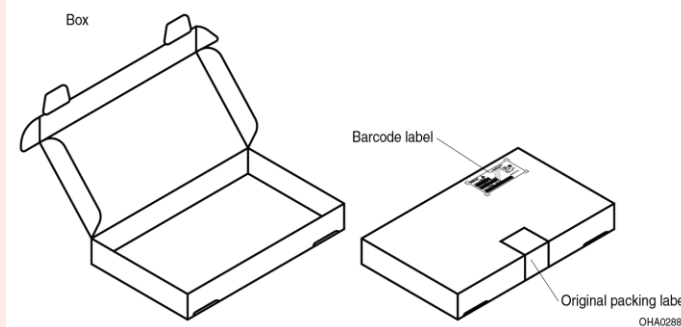
New status

Add additional tray and Inner box in the data sheet

Schematic Transportation Box ¹¹⁾



Schematic Transportation Box ¹¹⁾



1st subcon

Dimensions of Transportation Box

Width	Length	Height
215 ± 5 mm	265 ± 5 mm	95 ± 5 mm
215 to 170	265 to 270	95 to 45

270 * 170 * 45mm

2nd subcon

Dimensions of Transportation Box

Width	Length	Height
215 ± 5 mm	265 ± 5 mm	95 ± 5 mm
215 to 103	265 to 128	95 to 25

128mm x 103mm x 25mm

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Introduction of Second Source for Green Laser PLT5 520B



4. Workability

Product	Die Bond Data	Wire Bond Data	Hermiticity																																																																																																																																																																																																																																																																							
PLT5 520B Lot A	Die Shear Data <table><tr><th>Num.</th><th>LD >150g</th><th>SM >830g</th><th>Judge</th></tr><tr><td>1</td><td>527</td><td>2212</td><td>OK</td></tr><tr><td>2</td><td>595</td><td>2214</td><td>OK</td></tr><tr><td>3</td><td>577</td><td>2217</td><td>OK</td></tr><tr><td>4</td><td>536</td><td>2213</td><td>OK</td></tr><tr><td>5</td><td>526</td><td>2214</td><td>OK</td></tr><tr><td>6</td><td>521</td><td>2214</td><td>OK</td></tr><tr><td>7</td><td>507</td><td>2214</td><td>OK</td></tr><tr><td>8</td><td>515</td><td>2214</td><td>OK</td></tr><tr><td>9</td><td>545</td><td>2215</td><td>OK</td></tr><tr><td>10</td><td>523</td><td>2214</td><td>OK</td></tr></table>	Num.	LD >150g	SM >830g	Judge	1	527	2212	OK	2	595	2214	OK	3	577	2217	OK	4	536	2213	OK	5	526	2214	OK	6	521	2214	OK	7	507	2214	OK	8	515	2214	OK	9	545	2215	OK	10	523	2214	OK	Wire pulling strength <table><tr><th rowspan="2">Num.</th><th colspan="6">Wire Pull (Spec : ≥4g)</th></tr><tr><th>#1</th><th>mode</th><th>#2</th><th>mode</th><th>#3</th><th>mode</th></tr><tr><td>1</td><td>5.9</td><td>B</td><td>6.9</td><td>B</td><td>10.7</td><td>B</td></tr><tr><td>2</td><td>5.4</td><td>B</td><td>6.8</td><td>B</td><td>12.3</td><td>B</td></tr><tr><td>3</td><td>7.3</td><td>B</td><td>7.3</td><td>B</td><td>11.6</td><td>B</td></tr><tr><td>4</td><td>6.7</td><td>B</td><td>8.1</td><td>B</td><td>11.4</td><td>B</td></tr><tr><td>5</td><td>6.6</td><td>B</td><td>7.2</td><td>B</td><td>12.4</td><td>B</td></tr><tr><td>6</td><td>6.8</td><td>B</td><td>6.8</td><td>B</td><td>14.1</td><td>B</td></tr><tr><td>7</td><td>7.7</td><td>B</td><td>6.3</td><td>B</td><td>11.9</td><td>B</td></tr><tr><td>8</td><td>7.1</td><td>B</td><td>7.6</td><td>B</td><td>10.2</td><td>B</td></tr><tr><td>9</td><td>7.3</td><td>B</td><td>6.8</td><td>B</td><td>10.4</td><td>B</td></tr><tr><td>10</td><td>7.3</td><td>B</td><td>6.8</td><td>B</td><td>12.1</td><td>B</td></tr><tr><td>AVG</td><td>6.8</td><td></td><td>7.1</td><td></td><td>11.7</td><td></td></tr><tr><td>max</td><td>7.7</td><td rowspan="3">OK</td><td>8.1</td><td rowspan="3">OK</td><td>14.1</td><td rowspan="3">OK</td></tr><tr><td>min</td><td>5.4</td><td>6.3</td><td>10.2</td></tr><tr><td>max-min</td><td>2.3</td><td>1.8</td><td>3.9</td></tr></table> Ball shearing strength <table><tr><th rowspan="2">Num.</th><th colspan="6">Ball Shear (Spec : ≥20g)</th></tr><tr><th>#1</th><th>mode</th><th>#2</th><th>mode</th><th>#3</th><th>mode</th></tr><tr><td>1</td><td>24.6</td><td>B</td><td>39.1</td><td>B</td><td>38.0</td><td>B</td></tr><tr><td>2</td><td>27.8</td><td>B</td><td>39.2</td><td>B</td><td>41.0</td><td>B</td></tr><tr><td>3</td><td>24.2</td><td>B</td><td>41.5</td><td>B</td><td>42.4</td><td>B</td></tr><tr><td>4</td><td>23.5</td><td>B</td><td>35.3</td><td>B</td><td>33.9</td><td>B</td></tr><tr><td>5</td><td>24.8</td><td>B</td><td>39.4</td><td>B</td><td>37.6</td><td>B</td></tr><tr><td>6</td><td>26.1</td><td>B</td><td>36.0</td><td>B</td><td>35.7</td><td>B</td></tr><tr><td>7</td><td>27.6</td><td>B</td><td>35.0</td><td>B</td><td>37.4</td><td>B</td></tr><tr><td>8</td><td>26.4</td><td>B</td><td>39.3</td><td>B</td><td>34.2</td><td>B</td></tr><tr><td>9</td><td>28.1</td><td>B</td><td>36.8</td><td>B</td><td>36.5</td><td>B</td></tr><tr><td>10</td><td>25.8</td><td>B</td><td>38.1</td><td>B</td><td>39.3</td><td>B</td></tr><tr><td>Avg</td><td>25.9</td><td></td><td>38.0</td><td></td><td>37.6</td><td></td></tr><tr><td>max</td><td>28.1</td><td rowspan="3">OK</td><td>41.5</td><td rowspan="3">OK</td><td>42.4</td><td rowspan="3">OK</td></tr><tr><td>min</td><td>23.5</td><td>35.0</td><td>33.9</td></tr><tr><td>max-min</td><td>4.6</td><td>6.5</td><td>8.5</td></tr></table>	Num.	Wire Pull (Spec : ≥4g)						#1	mode	#2	mode	#3	mode	1	5.9	B	6.9	B	10.7	B	2	5.4	B	6.8	B	12.3	B	3	7.3	B	7.3	B	11.6	B	4	6.7	B	8.1	B	11.4	B	5	6.6	B	7.2	B	12.4	B	6	6.8	B	6.8	B	14.1	B	7	7.7	B	6.3	B	11.9	B	8	7.1	B	7.6	B	10.2	B	9	7.3	B	6.8	B	10.4	B	10	7.3	B	6.8	B	12.1	B	AVG	6.8		7.1		11.7		max	7.7	OK	8.1	OK	14.1	OK	min	5.4	6.3	10.2	max-min	2.3	1.8	3.9	Num.	Ball Shear (Spec : ≥20g)						#1	mode	#2	mode	#3	mode	1	24.6	B	39.1	B	38.0	B	2	27.8	B	39.2	B	41.0	B	3	24.2	B	41.5	B	42.4	B	4	23.5	B	35.3	B	33.9	B	5	24.8	B	39.4	B	37.6	B	6	26.1	B	36.0	B	35.7	B	7	27.6	B	35.0	B	37.4	B	8	26.4	B	39.3	B	34.2	B	9	28.1	B	36.8	B	36.5	B	10	25.8	B	38.1	B	39.3	B	Avg	25.9		38.0		37.6		max	28.1	OK	41.5	OK	42.4	OK	min	23.5	35.0	33.9	max-min	4.6	6.5	8.5	Leakage test <table><tr><th>Hermeticity test</th><th>NG Rate/Quantity</th><th>Remark</th></tr><tr><td>Fine leak < 5.0E-09 Pa*m3/sec</td><td>0/446</td><td>1.23E-09 Pa*m3/sec</td></tr><tr><td>Gross leak No Bubble</td><td>0/10</td><td>No Bubble</td></tr></table>	Hermeticity test	NG Rate/Quantity	Remark	Fine leak < 5.0E-09 Pa*m3/sec	0/446	1.23E-09 Pa*m3/sec	Gross leak No Bubble	0/10	No Bubble
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OS-PCN-2021-021-A

Introduction of Second Source for Green Laser PLT5 520B



4. Workability

Product	Die Bond Data	Wire Bond Data	Hermiticity																																																																																																																																																																																																																																																																							
PLT5 520B Lot B	Die Shear Data <table><tr><th>Num.</th><th>LD >150g</th><th>SM >930g</th><th>Judge</th></tr><tr><td>1</td><td>530</td><td>2214</td><td>OK</td></tr><tr><td>2</td><td>530</td><td>2211</td><td>OK</td></tr><tr><td>3</td><td>580</td><td>2145</td><td>OK</td></tr><tr><td>4</td><td>563</td><td>2216</td><td>OK</td></tr><tr><td>5</td><td>516</td><td>2212</td><td>OK</td></tr><tr><td>6</td><td>557</td><td>2216</td><td>OK</td></tr><tr><td>7</td><td>500</td><td>2197</td><td>OK</td></tr><tr><td>8</td><td>577</td><td>2107</td><td>OK</td></tr><tr><td>9</td><td>560</td><td>2212</td><td>OK</td></tr><tr><td>10</td><td>591</td><td>2136</td><td>OK</td></tr></table>	Num.	LD >150g	SM >930g	Judge	1	530	2214	OK	2	530	2211	OK	3	580	2145	OK	4	563	2216	OK	5	516	2212	OK	6	557	2216	OK	7	500	2197	OK	8	577	2107	OK	9	560	2212	OK	10	591	2136	OK	Wire pulling strength <table><tr><th rowspan="2">Num.</th><th colspan="6">Wire Pull (Spec : ≥4g)</th></tr><tr><th>#1</th><th>mode</th><th>#2</th><th>mode</th><th>#3</th><th>mode</th></tr><tr><td>1</td><td>7.0</td><td>B</td><td>12.5</td><td>B</td><td>6.9</td><td>B</td></tr><tr><td>2</td><td>7.5</td><td>B</td><td>12.1</td><td>B</td><td>6.5</td><td>B</td></tr><tr><td>3</td><td>7.2</td><td>B</td><td>12.7</td><td>B</td><td>6.8</td><td>B</td></tr><tr><td>4</td><td>7.0</td><td>B</td><td>11.6</td><td>B</td><td>6.7</td><td>B</td></tr><tr><td>5</td><td>7.8</td><td>B</td><td>10.5</td><td>B</td><td>6.9</td><td>B</td></tr><tr><td>6</td><td>6.3</td><td>B</td><td>13.1</td><td>B</td><td>7.0</td><td>B</td></tr><tr><td>7</td><td>7.8</td><td>B</td><td>13.8</td><td>B</td><td>6.7</td><td>B</td></tr><tr><td>8</td><td>6.6</td><td>B</td><td>13.5</td><td>B</td><td>7.1</td><td>B</td></tr><tr><td>9</td><td>7.6</td><td>B</td><td>13.1</td><td>B</td><td>6.3</td><td>B</td></tr><tr><td>10</td><td>6.6</td><td>B</td><td>9.9</td><td>B</td><td>6.8</td><td>B</td></tr><tr><td>AVG</td><td>7.1</td><td></td><td>12.3</td><td></td><td>6.8</td><td></td></tr><tr><td>max</td><td>7.8</td><td rowspan="3">OK</td><td>13.8</td><td rowspan="3">OK</td><td>7.1</td><td rowspan="3">OK</td></tr><tr><td>min</td><td>6.3</td><td>9.9</td><td>6.3</td></tr><tr><td>max-min</td><td>1.5</td><td>3.9</td><td>0.8</td></tr></table> Ball shearing strength <table><tr><th rowspan="2">Num.</th><th colspan="6">Ball Shear (Spec : ≥20g)</th></tr><tr><th>#1</th><th>mode</th><th>#2</th><th>mode</th><th>#3</th><th>mode</th></tr><tr><td>1</td><td>28.4</td><td>B</td><td>30.3</td><td>B</td><td>31.9</td><td>B</td></tr><tr><td>2</td><td>29.1</td><td>B</td><td>44.6</td><td>B</td><td>47.3</td><td>B</td></tr><tr><td>3</td><td>32.3</td><td>B</td><td>37.7</td><td>B</td><td>40.8</td><td>B</td></tr><tr><td>4</td><td>29.0</td><td>B</td><td>41.0</td><td>B</td><td>38.9</td><td>B</td></tr><tr><td>5</td><td>27.4</td><td>B</td><td>44.5</td><td>B</td><td>46.6</td><td>B</td></tr><tr><td>6</td><td>27.8</td><td>B</td><td>33.6</td><td>B</td><td>40.3</td><td>B</td></tr><tr><td>7</td><td>26.2</td><td>B</td><td>33.2</td><td>B</td><td>42.9</td><td>B</td></tr><tr><td>8</td><td>26.7</td><td>B</td><td>33.5</td><td>B</td><td>36.4</td><td>B</td></tr><tr><td>9</td><td>27.1</td><td>B</td><td>43.1</td><td>B</td><td>44.2</td><td>B</td></tr><tr><td>10</td><td>26.3</td><td>B</td><td>42.6</td><td>B</td><td>45.2</td><td>B</td></tr><tr><td>Avg</td><td>28.0</td><td></td><td>38.4</td><td></td><td>41.5</td><td></td></tr><tr><td>max</td><td>32.3</td><td rowspan="3">OK</td><td>44.6</td><td rowspan="3">OK</td><td>47.3</td><td rowspan="3">OK</td></tr><tr><td>min</td><td>26.2</td><td>30.3</td><td>31.9</td></tr><tr><td>max-min</td><td>6.1</td><td>14.3</td><td>15.4</td></tr></table>	Num.	Wire Pull (Spec : ≥4g)						#1	mode	#2	mode	#3	mode	1	7.0	B	12.5	B	6.9	B	2	7.5	B	12.1	B	6.5	B	3	7.2	B	12.7	B	6.8	B	4	7.0	B	11.6	B	6.7	B	5	7.8	B	10.5	B	6.9	B	6	6.3	B	13.1	B	7.0	B	7	7.8	B	13.8	B	6.7	B	8	6.6	B	13.5	B	7.1	B	9	7.6	B	13.1	B	6.3	B	10	6.6	B	9.9	B	6.8	B	AVG	7.1		12.3		6.8		max	7.8	OK	13.8	OK	7.1	OK	min	6.3	9.9	6.3	max-min	1.5	3.9	0.8	Num.	Ball Shear (Spec : ≥20g)						#1	mode	#2	mode	#3	mode	1	28.4	B	30.3	B	31.9	B	2	29.1	B	44.6	B	47.3	B	3	32.3	B	37.7	B	40.8	B	4	29.0	B	41.0	B	38.9	B	5	27.4	B	44.5	B	46.6	B	6	27.8	B	33.6	B	40.3	B	7	26.2	B	33.2	B	42.9	B	8	26.7	B	33.5	B	36.4	B	9	27.1	B	43.1	B	44.2	B	10	26.3	B	42.6	B	45.2	B	Avg	28.0		38.4		41.5		max	32.3	OK	44.6	OK	47.3	OK	min	26.2	30.3	31.9	max-min	6.1	14.3	15.4	Leakage test <table><tr><th>Hermeticity test</th><th>NG Rate/Quantity</th><th>Remark</th></tr><tr><td>Fine leak < 5.0E-09 Pa*m3/sec</td><td>0/232</td><td>1.27E-09 Pa*m3/sec</td></tr><tr><td>Gross leak No Bubble</td><td>0/10</td><td>No Bubble</td></tr></table>	Hermeticity test	NG Rate/Quantity	Remark	Fine leak < 5.0E-09 Pa*m3/sec	0/232	1.27E-09 Pa*m3/sec	Gross leak No Bubble	0/10	No Bubble
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Introduction of Second Source for Green Laser PLT5 520B



4. Workability

Product

PLT5 520B
Lot C

Die Bond Data

Die Shear Data

Num.	LD >150g	SM >930g	Judge
1	500	2215	OK
2	539	2214	OK
3	534	2218	OK
4	576	2214	OK
5	557	2212	OK
6	568	2215	OK
7	560	2215	OK
8	557	2213	OK
9	542	2216	OK
10	512	2216	OK

Wire Bond Data

Wire pulling strength

Num.	Wire Pull (Spec : ≥4g)					
	#1	mode	#2	mode	#3	mode
1	7.4	B	7.2	B	10.7	B
2	6.6	B	7.4	B	10.3	B
3	6.8	B	7.2	B	12.0	B
4	6.9	B	7.9	B	13.1	B
5	6.1	B	7.3	B	11.0	B
6	7.5	B	6.4	B	12.4	B
7	7.2	B	6.4	B	10.9	B
8	6.5	B	6.2	B	13.7	B
9	6.5	B	7.4	B	11.4	B
10	5.7	B	6.7	B	11.2	B
AVG	6.7		7.0		11.7	
max	7.5	OK	7.9	OK	13.7	OK
min	5.7		6.2		10.3	
max-min	1.8		1.7		3.4	

Ball shearing strength

Num.	Ball Shear (Spec : ≥20g)					
	#1	mode	#2	mode	#3	mode
1	25.5	B	37.7	B	44.0	B
2	26.1	B	41.5	B	37.9	B
3	31.5	B	32.6	B	32.4	B
4	26.7	B	45.5	B	38.1	B
5	26.4	B	39.0	B	37.6	B
6	25.8	B	31.0	B	25.7	B
7	27.5	B	33.8	B	35.5	B
8	26.9	B	39.4	B	34.3	B
9	22.1	B	40.4	B	39.6	B
10	28.7	B	32.4	B	29.1	B
Avg	26.7		37.3		35.4	
max	31.5	OK	45.5	OK	44.0	OK
min	22.1		31.0		25.7	
max-min	9.4		14.5		18.3	

Hermiticity

Leakage test

Hermeticity test	NG Rate/Quantity	Remark
Fine leak < 5.0E-09 Pa*m3/sec	0/389	1.14E-09 Pa*m3/sec
Gross leak No Bubble	0/10	No Bubble

Conclusion:

Workability data pass the process assembly requirements

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Introduction of Second Source for Green Laser PLT5 520B



5. Reliability Test Plan

Test vehicle: PLT5 520B

Test item	Test condition	Test duration	Sample Size
High Temperature Operating Life HTOL <i>JESD22-A108</i>	$T_A = 25^{\circ}\text{C}$, $I_{\text{const}} = 350\text{mA}$	1000h	1x15 1x5 ¹⁾
High Temperature Operating Life HTOL <i>JESD22-A108</i>	$T_A = 60^{\circ}\text{C}$, $I_{\text{const}} = 220\text{mA}$	1000h	1x10 1x5 ¹⁾
Low Temperature Storage LTS <i>JESD22-A103</i>	$T_A = -40^{\circ}\text{C}$	1000h	1x5
Temperature Storage TS <i>JESD22-A103</i>	$T_A = +100^{\circ}\text{C}$	1000h	1x5
Temperature Cycling TC <i>JESD22-A104</i>	$-40^{\circ}\text{C}/+100^{\circ}\text{C}$, 15min each extreme	1000c	1x15 1x5 ¹⁾
Vibration variable frequency VVF <i>JESD22-B103</i> + Mechanical shock MS <i>JESD22-B110</i>	196m/s ² (20gn) from 20 – 2000Hz 4min / cycle; 4 cycles / axis; 3 axes 14700m/s ² (1500gn); half sine; 0,5ms / shock; 5 shocks / direction; 6 directions	1x	1x10
Solderability SD <i>IEC 60068-2-20</i>	$T_A = 245^{\circ}\text{C}$ $T_A = 260^{\circ}\text{C}$	2s 10s	1x10

Note: 1) reference lot

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Introduction of Second Source for Green Laser PLT5 520B



6. PCN Samples

PCN Samples Availability

On request

7. Time Schedule

Time schedule for PCN material
(after implementation of change):

Final data sheet	Available
Final qualification reports	Available
PCN Samples	16.08.2021
Start of delivery	04.10.2021 ^{*)} , ^{**)}

^{*)} or earlier if released by customer and upon mutual agreement
^{**)} mixable technologies

Note:

PCN material: Products with implementation of the changes as described in the PCN.

QUALITY
FIRST

Thank you.